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vitamin A

a fat-soluble alcohol, most abundant in fish and especially in fish-liver oils. **Vitamin A** is also found in butter and in the liver fat of various animals. **Vitamin A** is not present in plants, but many vegetables and fruits contain one or more of a class of pigments that can be converted to **vitamin A** in the body; of these pigments, β -carotene (**provitamin A**) is an excellent source of the **vitamin**. The colour of carrots largely results from their β -carotene content.

Vitamin A is readily destroyed upon exposure to heat, light, or air. The **vitamin**, which functions directly in vision, is a component of a pigment, called visual purple, present in the retina of the eye.

Several closely related compounds with the effects of **vitamin A** are found in animal fats. Freshwater-fish oils, for example, contain, in addition to **vitamin A**, **vitamin A₂**, which differs from the former by having two fewer hydrogen atoms. **Vitamin A₂** can also form a visual pigment.

Vitamin A is required by humans in very small amounts; the recommended dietary allowance for adults is 1.0 mg. This can be provided by 6 mg of β -carotene.

The existence of **vitamin A** was first clearly recognized in 1913; its chemical nature was established in 1933; and it was first synthesized in 1947.

INTERNET LINKS

Search for related Internet links that use the term "vitamin A".

INDEX ENTRY

Information about this topic in other articles

vitamin A (chem. compound)

- applications in animal feed

ON THIS TOPIC

- ▶ **ARTICLE**
- ▶ **INDEX ENTRY**
- ▶ **TABLES**
- ▶ **INTERNET LINKS**

RELATED TOPICS

more general

- diterpene
- vitamin

more specific forms

- retinal
- retinol

products

- retinoic acid
- retinyl ester

- in Vitamins
from feed
- in Beef cattle feed
from livestock farming
- *chemistry*
 - alkene properties
 - isoprenoids
 - in Isoprenoids
from chemical compound
 - in Biological functions
from chemical compound
 - in Tetraterpenes
from chemical compound
- *physiology*
 - bone growth
 - carotene conversion
 - childhood disease
 - coloration and vision
 - in Wald, George
 - in Nonnitrogenous pigments
from coloration
 - in Visual functions
from coloration
 - digestion
 - disease
 - nutrition
 - poisoning and toxicity
 - visual pigment chemistry
 - rhodopsin production
- research by Karrer
- *sources*
 - cod-liver oil
 - milk
- structure and functions

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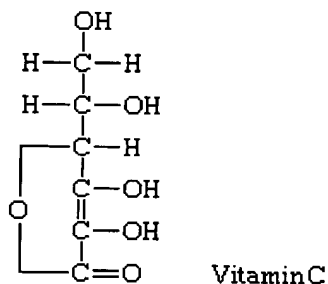
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vitamin C

also called ASCORBIC ACID, water-soluble, carbohydrate-like substance that is involved in certain of the metabolic processes of animals. Although most animals can synthesize **vitamin C**, it is necessary in the diet of some, including humans and other primates and guinea pigs, in order to prevent scurvy, a disease characterized by debility, blood changes, spongy gums, and hemorrhages in the tissues of the body. First isolated in 1928, **vitamin C** was identified as the curative agent for scurvy in 1932. It has since been the object of continued active laboratory research.

Definitive knowledge of the details of its action is surprisingly scant, even though the **vitamin** is known to be essential in a variety of metabolic functions, including synthesis of collagen (a protein important in the formation of healthy skin, tendons, bones, and supportive tissues and in wound healing); maintenance of the structural strength of the blood vessels; metabolism of certain amino acids; and the synthesis or release of hormones in the adrenal glands. It has also been suggested that **vitamin C** plays a part in protecting the body against infection, though scientific data do not clearly support this claim.



Relatively large amounts of **vitamin C** are required--e.g., an adult man is said to need about 70 mg per day. Citrus fruits and fresh vegetables are the best dietary sources of the **vitamin**.

ON THIS TOPIC

- ARTICLE
- INDEX ENTRY
- TABLES
- INTERNET LINKS

RELATED TOPICS

more general
- vitamin

Because **vitamin C** is easily destroyed by reactions with oxygen, especially in neutral or alkaline solution or at elevated temperatures, it is difficult to preserve in foods. The **vitamin** is added to certain fruits to prevent browning.

INTERNET LINKS

Search for related Internet links that use the term "vitamin C".

INDEX ENTRY

Information about this topic in other articles

vitamin C (chem. compound)

- *applications*
 - animal diet
 - food preservation
 - pasta
- *chemistry*
 - chemical conversion reactions
 - reduced furan
 - structure and functions
- occurrence in fruits
- physiological effects
 - bone growth
 - common cold
 - disease
 - nutrition
 - in Legumes (pulses)
from nutrition, human
 - in Vitamin C
from nutrition, human
 - scurvy treatment
 - in scurvy
 - in Vitamins
from nutritional disease
- *work of*
 - Haworth
 - Pauling
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ARTICLE

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vitamin E

a fat-soluble compound (tocopherol) found principally in certain plant oils and the leaves of green vegetables.

Wheat-germ oil is a particularly rich source. **Vitamin E**, first recognized in 1922, was first obtained in a pure form in 1936; it was identified chemically in 1938. A number of similar compounds having **vitamin E** activity and called tocopherols have been isolated.

Vitamin E acts as an inhibitor of oxidation processes in body tissues. It protects unsaturated fats in the body from oxidation by peroxides and other free radicals. The possibility that **vitamin E** may help prolong an active life-span by slowing the rate of oxidative destruction of biological membranes is under study. The tocopherols are used commercially as antioxidants to retard the rancidification of fats, especially vegetable oils.

For the effects of depriving animals of this **vitamin**, see **vitamin E** deficiency.

INTERNET LINKS

Search for related Internet links that use the term "vitamin E".

INDEX ENTRY

Information about this topic in other articles

vitamin E (chem. compound)

- blood lipid disorders
- chemistry
 - heterocyclic compounds
 - isoprenoid
 - in Isoprenoids
from chemical compound
 - in Biological functions
from chemical compound
 - phenol functional group
 - phytol derivative
 - structure and functions

ON THIS TOPIC

- ▶ ARTICLE
- ▶ INDEX ENTRY
- ▶ TABLES
- ▶ INTERNET LINKS

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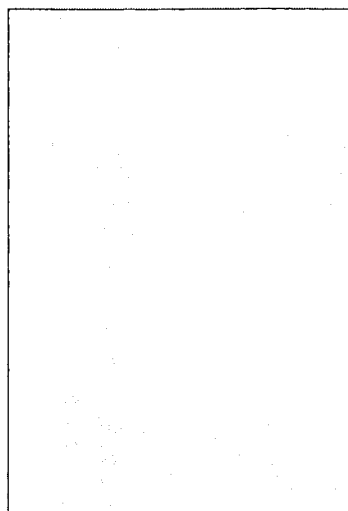
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- vitamin

also related

- vitamin E deficiency

- digestion
- nutrition
 - animal
 - diseases and disorders
 - human



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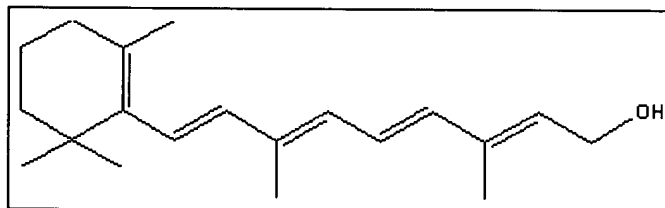
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Retinol [68-26-8]

Synonyms: Vitamin A; ACON; afaxin; agiolan; Alphalin; alphasterol; anatola; anatola a; anti-infective vitamin; antixerophthalmic vitamin; Aoral; apexol; aquasynth; Atars; ATAV; avibon; Avita; avitol; axerophthol; biosterol; chocola a; 3,7-dimethyl-9-(2,6,6-trimethyl-1-cyclohexen-1-yl)-2,4,6,8-nonatetraen-1-ol; disatabs tabs; dofsol; epiteliol; hi-a-vita; lard factor; 2,4,6,8-nonatetraen-1-ol, 3,7-dimethyl-9-(2,6,6-trimethyl-1-cyclohexen-1-yl)-, (all-E)-; oleovitamin a; ophthalamin; prepalin; all-trans-retinol; retrovitamin a; testavol; vaflo; Vafol; VI-alpha; Vitamin A1; Vitamin A alcohol; Vitamin A1 alcohol; all-trans-vitamin a alcohol; vitavel a; vitpex; Vogan; vogan-neu; trans-retinol; all-trans-retinyl alcohol; apostavit; axerol; dohyfral a; nio-a-let;

 $C_{20}H_{30}O$

286.4564

[View with ChemDraw Plugin](#)[Save in CDX format](#)[BUY AT CHEMACX.COM](#)[VIEW CHEM3D MODEL](#)[Add Compound](#)[Add or Change Property](#)[Add Link](#)[Feedback](#)**ACX Number** X1009884-3**Melting Point (°C)** 62 - 64**Boiling Point (°C)** 137 - 138**Refractive Index****Evaporation Rate****Flash Point (°C)****DOT Number****Comments** Yellow crystals. LIGHT/AIR SENSITIVE.**CAS RN** 68-26-8**Density****Vapor Density****Vapor Pressure****Water Solubility****EPA Code****RTECS** VH6750000**More information about the chemical is available in these categories:**

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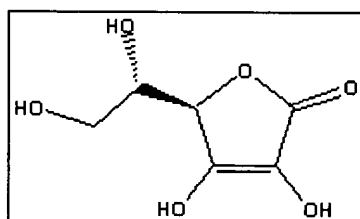
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Vitamin C [50-81-7]

Synonyms: L-ascorbic acid; L-3-ketothreohexuronic acid; Ascorbicap; Cebid; Cecon; Cevalin; Cemill; Sunkist; L-(+)-Ascorbic Acid; Acid Ascorbic; antiscorbic vitamin; antiscorbic vitamin; cevitamic acid; 3-keto-L-gulofuranolactone; L-3-ketothreohexuronic acid lactone; laroscorbine; L-lyxoascorbic acid; 3-oxo-L-gulofuranolactone; L-xyloascorbic acid; adenex; allercorb; cantan; proscorbin; vitacin; AA; arco-cee; ascoltin; ascorb; ascorbajen; ascorbicab; ascor-b.i.d.; ascorbutina; ascorin; ascorreal; ascorvit; cantaxin; catavin c; cebicure; cebion; cee-caps td; cee-vite; cegiolan; ceglion; celaskon; ce lent; Celin; cemagyl; ce-mi-lin; cenetone; cereon; cergona; cescorbat; cetamid; cetemican; cevatine; Cevex; cevibid; cevimin; ce-vi-sol; cevital; cevitamin; cevitan; cevitec; Cewin; ciamin; Cipca; citrisorb; c-level; C-Long; colascor; concemin; C-Quin; C-Span; c-vimin; dora-c-500; davitamon c; duosorb; L-threo-hex-2-enonic acid, gamma-lactone; Hicee; hybrin; IDO-C; lemasorb; liqui-cee; Meri-c; natrasorb injectable; 3-oxo-L-gulofuranolactone (enol form); planavit c; redoxon; ribena; roscorbic; scorbacid; scorbu-c; secorbate; testascorbic; vicelat; Vicin; vicomin c; viforcit; viscorin; vitace; vitacee; vitacimin; vitamisin; vitascorbol; Xitix; Ascorbic Acid;

$C_6H_8O_6$
176.1256

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ACX Number	X1001259-8	CAS RN	50-81-7
Melting Point (°C)	190 - 192	Density	1.7
Boiling Point (°C)		Vapor Density	
Refractive Index		Vapor Pressure	
Evaporation Rate		Water Solubility	>=10 g/100 mL at 23 C
Flash Point (°C)		EPA Code	
DOT Number		RTECS	CI7650000
Comments	Reichstein, HCA, 1934, 17, 311. Colorless crystals or white or very pale yellow crystalline powder. LIGHT/AIR SENSITIVE.		

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[L-\(+\)-Ascorbic acid, 99+%](#)

[Proton NMR Spectral Molecular Formula Index](#)

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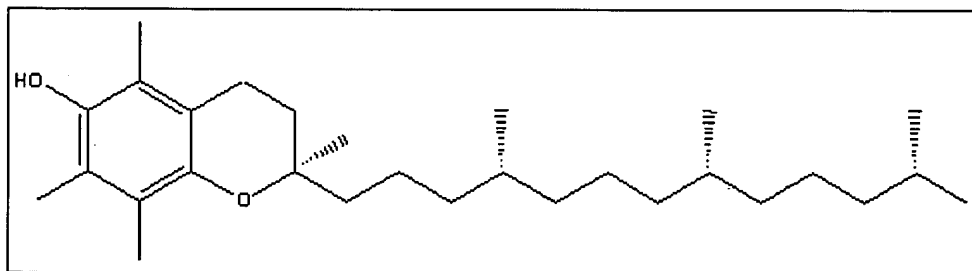
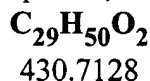
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Vitamin E [59-02-9]

Synonyms: Aquasol E; Eprolin; E-vitamin succinate; Pheryl-E; Vita plus E; Alpha-Tocopherol; D-alpha-tocopherol; 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-, [2R-[2R*(4R*,8R*)]]-; 5,7,8-trimethyltolcol; antisterility vitamin; eprolin-s; epsilon; ephynal; syntopherol; E-vimin; etavit; phytofermine; profecundin; tokopharm; viteolin; Esorb; vasculals; covirel; Evion;

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[Save in CDX format](#)[BUY AT CHEMACX.COM](#)[VIEW CHEM3D MODEL](#)[Add Compound](#)[Add or Change Property](#)[Add Link](#)[Feedback](#)**ACX Number** X1001317-5**Melting Point (°C)** 2.5 - 3.5**Boiling Point (°C)** 350**Refractive Index****Evaporation Rate****Flash Point (°C)****DOT Number****Comments**

Scott, HCA, 1976, 59, 290. Pale yellow, viscous liquid. AIR SENSITIVE; LIGHT SENSITIVE.

CAS RN 59-02-9**Density** 0.95**Vapor Density****Vapor Pressure****Water Solubility** Insoluble**EPA Code****RTECS** DJ2900000


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- ⊖ Pending
- ⊖ Active
 - 🔍 L1: (11) (vitamin adj3 (a or c or e)) and skin and microspheres and ((cell or cellular) adj activ...
 - 🔍 L2: (2) ((microparticles or microspheres) adj3 ("vitamin a" or retinol)) and (microparticles or...
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 - 🔍 (917) (vitamin and (A and c and e)) and microspheres
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 - 🔍 (17852) vitamin adj3 (a or c or e)
 - 🔍 (204) (vitamin adj3 (a or c or e)) and skin and microspheres
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 - 🔍 (0) "vitamin a".ti.
 - 🔍 (3) "6037481"
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adj3
("vitamin a" or retinol))
and
(microparticles or microspheres)
adj3
("vitamin c" or ascorbic)



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Pages

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Ready

NUM	DATE	DESCRIPTION	AMOUNT
1	1/1/78
2	1/15/78
3	2/1/78
4	2/15/78
5	3/1/78
6	3/15/78
7	4/1/78
8	4/15/78
9	5/1/78
10	5/15/78
11	6/1/78
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94	11/15/81
95	12/1/81
96	12/15/81
97	1/1/82
98	1/15/82
99	2/1/82
100	2/15/82